Quick Reference: Symptom Lookup

Use this table to quickly identify the most likely cause and fix for common symptoms. For detailed procedures, see the corresponding section below.

Symptom	Likely Cause	Quick Fix	Est. Time
Pressure drops mid-cycle	Clogged inlet filter	Replace filter element	15 min
Pump making whining noise	Air in hydraulic fluid (cavitation)	Bleed system, check fluid level	30 min
Slow ram descent	Low fluid level or viscosity	Top off fluid, check temperature	10 min
Ram drifts when stopped	Leaking control valve	Replace valve seals	45 min
Fluid overheating	Cooler fan failure or dirty fins	Clean fins, verify fan operation	20 min
Uneven pressure L/R	Cylinder seal wear	Replace cylinder seals	2 hrs
Error code E-47	Proximity sensor misaligned	Realign sensor, check gap	10 min

Equipment Overview

Parameter	Value
Machine	Greenerd H-Frame Hydraulic Press
Capacity	50 Tons
Serial Number	GH-50-29847
Location	Building 2, Station 7
Year Installed	2019
Hydraulic System	20-gallon reservoir, 3000 PSI max
Fluid Type	AW-46 Hydraulic Oil
Maintenance Interval	500 hours or 3 months (whichever first)

[IMAGE: Full machine overview - Greenerd H-Frame 50-ton press with control panel visible]

Problem 1: Pressure Drops Mid-Cycle

Symptom Description

The press begins its cycle normally but loses pressure partway through the stroke. The operator may notice the ram slowing down, the pressure gauge dropping below the programmed value, or the workpiece not being fully formed. This is the most common issue on this machine, accounting for approximately 60% of unplanned downtime.

Diagnosis Flowchart

Follow this decision tree to narrow down the root cause:

Step	Check	If YES	If NO
1	Is fluid level low in sight glass?	Top off fluid and retest	Go to Step 2
2	Is fluid dark brown or smells burnt?	Drain and replace fluid	Go to Step 3
3	Is inlet filter indicator in RED zone?	Replace filter (see below)	Go to Step 4
4	Any visible hose leaks under press?	Tighten fitting or replace hose	Go to Step 5
5	Does pressure hold when ram is static?	Check control valve (call maintenance)	Pump may be failing (escalate)

■ **EXPERT TIP:** Pressure drops are 90% of the time a filter issue. Check the filter FIRST before investigating more complex causes. It saves the most time.

Root Cause #1: Clogged Inlet Filter (Most Common)

1. **SHUT DOWN** the press and engage lockout/tagout per facility procedure.
2. **LOCATE** the inlet filter assembly on the left side of the reservoir (behind the access panel).
3. **PLACE** a drain pan below the filter housing to catch any fluid.
4. **REMOVE** the filter housing cap using the 1-1/4" wrench. Turn counterclockwise.
5. **EXTRACT** the old filter element. Note the condition — if it's dark and clogged with metal particles, this indicates upstream component wear.
6. **INSPECT** the housing interior. Wipe clean with a lint-free towel. Check the O-ring seat for damage.
7. **INSTALL** new filter element (Part #: GR-50-FL-010). Ensure it seats fully in the housing.
8. **REPLACE** the O-ring if damaged (Part #: GR-50-OR-003). Lubricate with a thin film of hydraulic oil.

9 **REINSTALL** the housing cap. Torque to 25 ft-lbs. Do not overtighten.

10 **REMOVE** lockout/tagout. Start the press and run 3 idle cycles to verify pressure holds.

[IMAGE: Filter housing location]	[IMAGE: Clogged vs. new filter]	[IMAGE: Correct O-ring seat]

■ **WARNING: Always engage lockout/tagout before opening the filter housing. The system retains residual pressure even when the press is off. Failure to lock out can result in sudden fluid release under pressure. Required PPE: Safety glasses, nitrile gloves.**

Safety Warnings & Hazards

■ **WARNING: Hydraulic Pressure: System operates at up to 3000 PSI. Never loosen fittings while system is pressurized. Always depressurize and lock out before service.**

■ **WARNING: Pinch Points: The ram and die area present severe crushing hazards. Never place hands or body parts in the press area during operation.**

■ **WARNING: Hot Fluid: Hydraulic fluid can reach 150°F during extended operation. Allow cooling time before draining or opening reservoirs.**

■ **WARNING: Fluid Contact: AW-46 hydraulic oil is a skin irritant. Wear nitrile gloves when handling. If contact occurs, wash with soap and water.**

■ **WARNING: Noise: Pump operation exceeds 85 dB. Hearing protection required within 10 feet of operating press.**

Required Parts & Tools

Part/Tool	Part Number	Qty	Location
Inlet filter element	GR-50-FL-010	2	Parts crib, Bin H-14
Filter housing O-ring	GR-50-OR-003	4	Parts crib, Bin H-14
AW-46 Hydraulic Oil	SHELL-AW46-5GAL	1	Fluid storage, Bay 3
Fluid test strips	HYD-TEST-100	1 box	QC cabinet
1-1/4" wrench	N/A	1	Tool cart, Drawer 3
Drain pan (5 gal)	N/A	1	Under press, left side
Lint-free towels	N/A	10	Dispenser at station
Torque wrench (25 ft-lb)	N/A	1	Tool cart, Drawer 1

Preventive Maintenance Schedule

Task	Frequency	Performed By

Check fluid level (sight glass)	Daily (start of shift)	Operator
Check fluid color and odor	Weekly	Operator
Inspect hoses for leaks/wear	Weekly	Operator
Replace inlet filter	Every 500 hours	Technician
Full fluid change	Annually or at contamination	Technician
Cylinder seal inspection	Every 2000 hours	Maintenance
Pump pressure test	Every 1000 hours	Maintenance
Cooler fan and fin cleaning	Monthly	Operator

This document was generated using the Manufacturing Flow Machine Troubleshooting skill. It demonstrates the typical output format: cover page, quick-reference symptom table, equipment overview, detailed troubleshooting sections with decision flowcharts, step-by-step repairs, image placeholders, safety warnings, parts lists, and maintenance schedules.